

MODELING THE IMPACT OF HCV THERAPY ON PEOPLE WHO INJECT DRUGS IN HO CHI MINH CITY, VIETNAM

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Background

Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV) coinfection is a major global health problem especially among people who inject drugs (PWID), with significant clinical implications. Mathematical models have been used to great effect to shape HIV care, but few have been proposed for HIV/HCV.

Methods

We constructed a deterministic compartmental ODE model that incorporated layers for HIV disease progression, HCV disease progression and PWID demography. Antiretroviral therapy (ART) and Methadone Maintenance Therapy (MMT) scale-ups were modeled as from 2016 and projected forward 10 years. HCV treatment roll-out was modeled beginning in 2026, after a variety of MMT scale-up scenarios, and projected forward 10 years.

Results

Our results indicate that scale-up of ART has a major impact on HIV though not on HCV burden. MMT scale-up has an impact on incidence of both infections. HCV treatment roll-out has a measurable impact on reductions of deaths, increasing multifold the mortality reductions afforded by just ART/MMT scale-ups.

Conclusion

HCV treatment roll-out can have major and long-lasting effects on averting PWID deaths on top of those averted by ART/MMT scale-up. Efficient intervention scale-up of HCV alongside HIV interventions is critical in Vietnam. Models such as the one described in this study can be used to conduct similar analyses in other communities plagued with high co-prevalence of HIV and HCV.

Disclosure of Interest:

None